

## CS/Math 278

### Lab6

**Due on Wednesday 10-14-2009 online by 5:00 pm**

Write a program that does the following.

1) It prompts the user to input ten integers with no repeated values. Let  $D$  be the set of integers entered by the user. The integers are stored in an array of size ten.

2) The program evaluates and prints out which of the following statements are true and which are false with respect to the domain  $D$  entered by the user.

Let  $P(x, y)$  be  $(x + y \text{ is odd}) \text{ or } x > 30$

*Prop 1:*  $\forall x \in D \exists y \in D P(x, y)$

*Prop 2:*  $\exists x \in D \forall y \in D P(x, y)$

*Prop 3:*  $\exists x \in D \exists y \in D P(x, y)$

*Prop 4:*  $\forall x \in D \forall y \in D P(x, y)$

3) For propositions prop1 and prop2 above, find a single set  $D_1$  manually that makes prop1 true and prop2 false. Print out this  $D_1$  and the truth values of prop1 and prop2 to the screen.

**Dialog with the user may look like the following:**

Please enter 10 integers: .....

prop1 is true

prop2 is false

prop3 is true

prop4 is false

$D_1 = \{\dots\}$  makes prop1 true and prop2 false.